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## **MONGOLIA: AVOIDING TRAGEDY IN THE WORLD'S LARGEST COMMONS**

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# **Mongolia:**

## **Avoiding Tragedy in the World's Largest Commons**

by

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### **Abstract**

In Mongolia 300,000 nomadic people herd 25 million animals over an unfenced area twice the size of France. Current economic theories assert that efficiency requires privatizing land until the savings from reduced congestion equal the costs of exclusion. However, the fundamental tradeoff in Mongolia is different. In Mongolia, privatization solves the problem of congestion at the cost of aggravating the problem of spreading risk. Assigning exclusive use-rights over particular pastures to families solves the problem of congestion among herds and increases the transaction costs of moving the herds across climatic zones in response to inclement weather. Thus efficiency requires privatizing land until the savings from reduced congestion equals the increase in the transaction cost of insuring against climatic risk. Customary law responds to this tradeoff with a different legal regime for different seasons of the year. Families enjoy relatively open access to summer pasture. In contrast, customary law assigns families exclusive use-rights to winter pasture. These facts about Mongolia generalize: Open-access resources are susceptible to inefficient congestion because users receive the average product, not the marginal product. Privatizing eliminates averaging, which also concentrates risk.

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## **Mongolia: Avoiding Tragedy in the World's Largest Commons<sup>2</sup>**

In Mongolia 300,000 nomadic people herd 25 million cattle, sheep, goats, yaks, horses, and camels over an unfenced area twice the size of France.<sup>3</sup> The steppe, mountain, and desert pastures of Mongolia are the world's largest "commons."<sup>4</sup> Although low rainfall makes the land vulnerable to degradation from over-grazing, it remains largely undamaged after more than a millennium of use.<sup>5</sup> How have Mongolians avoided the tragedy of the commons? Published research and personal observations suggest an explanation based on property rights as developed through customary law.<sup>6</sup>

"Open-access" refers to a property regime in which a broad group of people can freely graze their animals on pastures, whereas "private ownership" refers to a property regime in which an individual or a small group of people has exclusive rights to graze their animals on particular pastures. In this context, "privatization" means converting the legal regime from open-access to private ownership. Current theories of land privatization derive from Demsetz's classic paper, as elegantly developed by subsequent scholars such as Ellickson, Eggertsson, Field, and Ostrom.<sup>7</sup> Unfortunately, these theories do not fit the facts of Mongolia. In the first section of this paper, I briefly describe the tragedy of the commons, recapitulate Demsetz's theory of privatization, explain why it does not fit the facts of Mongolia, and propose an alternative. I also suggest why this alternative generalize beyond Mongolian pasture. In subsequent sections of the paper I relate my theory to the past and future of Mongolia.

### **Theory**

A pasture is congested if an additional animal grazing on it reduces the food available to other animals. As congestion increases, a pasture may be "overused" in two senses of the word. First, the actual number of pastured animals may exceed the number that maximizes the joint profits of their owners. When a pasture is over-used in this sense,

a smaller number of better nourished animals would increase profits to their owners. Second, the actual number of animals may exceed the carrying-capacity of the land. When a pasture is over-used in this sense, the land degrades.

Placing an additional animal on a congested pasture deprives other animals of grass and increases the pressure on the land. If the affected animals and land belong to him, the owner will consider these costs when deciding whether to add an additional animal. Private ownership of animals and land internalizes congestion costs and avoids over-use. In contrast, if the affected animals and land belong to someone else, the owner may ignore the effects on other animals and the land when deciding whether to add an additional animal. Open-access to land externalizes congestion costs and causes over-use. This tragic outcome, however, presupposes political paralysis that obstructs collective action. In close-knit communities, people typically avoid the tragedy by changing the law.<sup>8</sup> The change in law may involve privatizing the land.

Demsetz predicted *when* privatization would occur. As explained, privatization reduces congestion costs. Privatization also creates costs of excluding non-owners, such as registering property rights, demarcating boundaries, monitoring trespassers, and prosecuting violators. Demsetz considered the trade-off between the costs of congestion and the costs of exclusion as central to privatization. In so far as he is right, efficiency requires privatizing land until the savings from reduced congestion equal the costs of exclusion. Demsetz predicted that privatization would occur at the efficient point in history. As time passes, population growth and capital accumulation increase congestion, whereas the costs of exclusion remain constant or diminish. Demsetz predicted that privatization would occur at the tipping point when congestion costs surpass exclusion costs.

This theory of land privatization overlooks the most fundamental tradeoff in Mongolia.<sup>9</sup> Inclement weather persistently endangers Mongolian herds. Mongolians respond to inclement weather by shifting herds across micro-climates. Shifting herds requires negotiating with impacted families. Negotiations are perfunctory under an open-access rule, because no one can exclude others from the land. In contrast, negotiations are

extensive under a private property rule, because permission to trespass must be obtained from numerous individuals or small groups. Negotiations are the transaction costs of insuring against climatic risk. Thus a change from open-access to private property increases the transaction costs of insuring against climatic risk.<sup>10</sup>

In choosing between open-access and private ownership of land in Mongolia, the decisive tradeoff concerns the cost of congestion and the cost of insurance against climatic risk. Private ownership lowers the cost of congestion and raises the transaction cost of insuring against climatic risk. Conversely, open-access raises the cost of congestion and lowers the transaction cost of insuring against climatic risk. Thus private property is more efficient when congestion is high and climatic risk is low, whereas open-access is more efficient when the opposite is true.<sup>11</sup> These facts are summarized by the northeast and southwest cells in Figure 1.

Figure 1 encompasses two more possibilities. When climatic risk and congestion are both low, efficiency requires open-access, as indicated by the southeast cell in Figure 1. When climatic risk and congestion are both high, their relative values must be compared to determine the more efficient property regime. This fact is indicated by “?” in the northwest cell in Figure 1. In general, the efficient use of Mongolia’s pasture requires privatizing use-rights until the gain from reduced congestion equals the loss from more costly insurance against climatic risk.

**Figure 1: Efficient Property Rule**

		<u>Climatic Risk</u>	
		High	Low
<u>Congestion</u>	High	?	private
	Low	open-access	open-access

The tradeoff between congestion and climatic risk changes with the seasons in Mongolia. I will contrast winter and summer. Winter forage comes primarily from pastures where wind thins the snow cover and animals can dig for dry grass. High quality winter pasture is scarce relative to the number of animals. Most unintended deaths of animals occur during the harsh winter months. In winter the animals may freeze from extreme cold or starve when impenetrable ice covers the grass. Winter weather makes moving the herds difficult, so they typically remain at the same pasture for the duration of the winter season. Survival of the herds during the harsh winter requires reserving lands for winter pasture and constraining the number of animals.

The animals must accumulate fat in the summer in order to survive the winter. To accumulate fat, the animals need green grasses. In summer, more precipitation and sunshine cause more grass to grow. The distribution of summer grasses depends upon local variations in rainfall. Late in the summer, Mongolians move the herds quickly from one pasture to another in order to add weight for the approaching winter.<sup>12</sup> Animals who remain in a region afflicted by summer drought may be too thin to survive the winter.

I summarize the difference between winter and summer in terms of congestion and climatic risk. Congestion and climatic risk are both relatively high in the winter. Furthermore, animals cannot be moved in winter to reduce climatic risk. High congestion and low mobility make private property the more efficient regime. In contrast, congestion and climatic risk are both relatively low in the summer. Furthermore, animals can be moved to reduce climatic risk. Low congestion and high mobility make open-access the more efficient regime.

Mongolian customary law responds to these facts about efficiency by imposing a different property regimes for different seasons. Customary law allocates exclusive use-rights over specific winter pastures to specific families.<sup>13</sup> The winter pastures of a family cannot be grazed by another family's herds at any time during the year.<sup>14</sup> Thus Mongolian customary law protects winter pasture from over-use by recognizing exclusive use-rights for families. In contrast, specific families have relatively weak claims in customary law to specific summer pastures. In summer the property rule resembles open-access.<sup>15</sup>

Mongolians insure against climatic risk in the summer at relatively low transaction cost by open access to uncongested pastures.<sup>16</sup> As explained, herds move many times in the late summer to take advantage of local variations in rainfall.

I must add another detail to my sketch of private winter pastures. As explained, herds typically remain at a family's winter pasture for the duration of the winter season. In an unusual winter, however, the families in a region may find that their own winter pastures cannot sustain their herds. To escape unpredictable cold or precipitation, the endangered families may attempt to move to a different micro-climate. Families apparently have the customary right to relocate an endangered herd elsewhere. Sometimes families relocate endangered herds to areas reserved by local government for emergencies. Other times the endangered families relocate their herds on the winter pastures reserved for other families, and the two groups must share. Thus the exclusive right to use winter pasture is not absolute. The reciprocal duty to share with endangered families limits a family's customary right to exclude others from its winter pastures. Enforcing this duty requires negotiations with impacted families and state officials, as I discuss later.

Researchers on Mongolia believe that its common pastures have suffered little degradation.<sup>17</sup> Mongolians avoid the tragedy of the commons by privatizing the congested resource, by which I mean winter pasture. Some degradation has occurred in Mongolia on pasture near wells and transportation links, where congested resources are not privatized. A similar solution was found by Eggertsson in the open pastures of the mountains of Iceland.<sup>18</sup>

The facts about Mongolia have wider application. Open-access resources are susceptible to inefficient congestion because users receive the average product, not the marginal product. Privatization causes each of them to receive the marginal product, but the elimination or averaging also concentrates risk. To illustrate, consider fishing along an open access river. Fishermen will relocate to the spots where the fishing is best, thus tending to equalize the catch. However, the best spots will suffer congestion. Technically, people will decide to fish by equating their opportunity cost to the *average* value of the catch per fisherman, which exceeds the *marginal* product (some fishermen catch fish that

others would have caught). In response to congestion, assume that families privatize the shore of the river by assigning exclusive fishing rights to particular parts of it. Privatizing the shore reduces congestion at the best fishing spots. However, the dispersion in the catch increases among fishermen, because they cannot move along the bank to the spots where fishing is best.

### ***Brief History***

Having sketched my basic claim, I now offer some details. Understanding Mongolian customary law involves understanding the role allowed for it by the state. The centralized state is apparently as old as Mongolia. According to a Chinese historian,<sup>19</sup> precursors of the Mongolians called the “Xiongnu,” whose armies breached China’s Great Wall around 200 BC and reached the Yellow River, organized themselves according to the “system of 10.” This system placed a leader over each group of 10 soldiers, with leaders aggregated into successive groups of 10, until the pyramid of authority reached the head of state. This system was adopted by Chengis Khan, whose empire stretched from the Caspian Sea to Beijing at his death in 1227. After his death, his heirs divided the empire and it declined, until the Manchu emperor of China ended Mongolia’s independence by conquest in 1644. The Manchus divided the country into districts with a governor over each one and continued the system of centralized, unitary administration.

Manchu rule disintegrated in the early 20th century. During the ensuing instability, Russian soldiers and Mongolian nationalists defeated the Chinese in 1921.<sup>20</sup> With backing from the Soviet Union, Mongolia created the world’s second communist state in 1924.<sup>21</sup> Under the leadership of a native Stalin, Mongolia subsequently attacked its feudal heritage with ruthless vigor. The economy mirrored Russia, with centralized planning, priority for heavy industry, and collectivized agriculture.

Having led Mongolia into communism, Russia led Mongolia out of it. Perestroika after 1984 was succeeded by democracy and economic liberalization in Mongolia after 1989. Unlike Russia, however, Mongolia’s communist party continues in power, having won wide majorities in free elections in 1990 and 1992. Mongolian’s national income declined even more precipitously than other post-communist countries after 1989,<sup>22</sup>



primarily because Mongolia was even more dependent than other countries on Russian subsidies and trade.<sup>23</sup> Mongolia's economic future probably lies in providing over-populated Asia with access to an unspoiled natural world, but Mongolians have little understanding as yet of a service economy.<sup>24</sup>

Mongolia is currently divided into 22 large units (21 "aimags" and the capital city), which are subdivided into 325 small units ("sums"), which are subdivided into 1,581 of the smallest units ("bags").<sup>25</sup> The aimag and sum governors in the communist era enjoyed broad powers to allocate resources and resolve disputes in the countryside.<sup>26</sup> They have been centrally appointed in the past, although now local legislatures influence the process and their authority seems ambiguous.<sup>27</sup>

Some historians say that there was no private ownership of land in Mongolia from 1206 to 1992.<sup>28</sup> The central government certainly claimed formal ownership of land in Mongolia since the Manchu conquest in 1644.<sup>29</sup> Individuals could own use-rights under the Manchus, but the power of local administrators over land was secured by state ownership. Since the Mongolian state already claimed ownership of all rural land, "collectivization" of agriculture did not mean that the state appropriated rural land. Rather, "collectivization" meant that the state appropriated animals and reorganized herding. Private herds were appropriated in the 1950s and their former owners were forced into collectives.<sup>30</sup> The collectives hired the former owners as employee-members to continue tending the animals. The employee-members of the collectives received productivity bonuses and were allowed to keep a small number of their own animals, just as the Russian collectives allowed small family plots for agriculture.<sup>31</sup>

Mongolian families traditionally kept mixed herds of horses, goats, sheep, cows, yaks, and camels. Mixing animals reduces risk and draws upon complementary abilities in different species.<sup>32</sup> The collectives originally attempted to group all the animals of a particular type together in order to achieve economies of scale and lower the cost of veterinarian services and other applications of scientific knowledge. The policy of homogenous grouping failed and was reversed.

The collectives formally dissolved after 1990 and the herds were distributed to private families.<sup>33</sup> Some collectives were reconstituted as cooperatives and continue many of their former practices. In other cases, families abandoned such organizations and went their own way. Today families typically own many of the animals that they tend, although families also participate in sharing arrangements or tend other people's animals for pay.<sup>34</sup> Current organizational and institutional arrangements are tentative, fluid, and complicated. Privatization and the freeing of agricultural prices after 1990 caused a sharp improvement in the terms of trade between the country and the city. The relative improvement in rural incomes provoked an urban backlash and the restoration of some restrictions on agricultural markets.<sup>35</sup>

Mongolia's constitution now recognizes ownership of land by the state and natural persons of Mongolian citizenship, but not by private institutions or foreigners.<sup>36</sup> The current Mongolian constitution, however, forbids private ownership of "pastures," and the government classifies 77% of the land as pastures.<sup>37</sup> Current plans to extend private ownership of land in Mongolia do not include pastures.<sup>38</sup> A vigorous political debate concerns privatizing some resources that pastoralists use other than pastures. Nomadic families typically live in circular tents called "gers," which move several times in the summer. Families traditionally construct permanent ger-sites on their winter pasture, including stables and corrals. In recent years, permanent ger-sites have developed on the edge of towns, near transportation links, or close to rural employers. Current discussions envision extending private ownership to permanent ger-sites.<sup>39</sup> Otherwise, current discussions of private ownership of land concern towns and non-agricultural users.

### ***State and Custom***

I have explained that the state owned all of Mongolia's land during most of its history, and the state still owns all pastures. However, families owned use-rights by customary law, especially use-rights to winter pasture, which I identified as the legal mechanism to avoid congestion. Some scholars believe these rights have existed continuously since the Mongolian empire's creation in the 13th century.<sup>40</sup> In any case, nomadic families had use-rights over pasture that the state owned after the Manchu

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conquest in 1644, and use rights were inherited or sometimes traded.<sup>41</sup> Disputes about use-rights were ultimately resolved by the governor in the region. Resolving such disputes according to custom served the interest of the governors by promoting smooth administration.

What happened to customary law during collectivization? Some researchers believe that the most important features of customary law persisted through collectivization.<sup>42</sup> For example, a collective typically divided and dispersed its herds for winter, “employing” its member-families to keep its animals on their winter pastures. Thus the collectives often, but not always, respected the exclusive use-rights of families to winter pasture.<sup>43</sup> Custom survived, not because of its favored legal status, but because it served everyone’s interests.<sup>44</sup>

Privatization of cooperatives and state farms proceeded after 1990 by distributing assets (especially livestock) and restructuring organizations or dissolving them.<sup>45</sup> The weakening of the collectives strengthened customary law by removing ideological and institutional impediments to it. Customary law guarantees reasonably secure use-rights.<sup>46</sup> Today, violation of property rights by private persons are compensable by civil judgments in courts or punishable by fines imposed by administrators.<sup>47</sup> Unfortunately, the constitution provides weak protection against violation of property rights by the state, including regulations and takings.<sup>48</sup> Owners of property in Mongolia enjoy much less security from state interference than in Western countries. Weaknesses in the bundle of ownership rights continue to undermine incentives to improve real property.<sup>49</sup>

I have explained that customary law insures against climatic risk through reciprocal duties to share. As collectives declined, small groups of families have joined together to cooperate along traditional lines.<sup>50</sup> However, insuring against climatic risk can involve moving herds across climatic zones. Such movements cross administrative boundaries and affect many resident families. For example, the administrators must decide whether to reserve certain pastures for emergency use, when to move herds on to reserve pastures, and whether to permit herds from other districts to cross into its district or pasture in it. Local administrators either take the lead in these movements or facilitate the decisions of

endangered families. Local administrators routinely performed this task under the old system of centralized control. To illustrate, in winter of 1986-87, snow covered the whole of Dornogobi aimag too deeply for animals to dig for food, so the central authorities instructed the neighboring aimag to deliver tons of fodder to Dornogobi without charge.<sup>51</sup> With the decline of government authority, sharing arrangements must be made privately. Insurance against climatic risk is one example of services diminished or lost to nomadic pastoralists by privatization.<sup>52</sup> This fact may have contributed to some opposition to abolition of state farms.<sup>53</sup>

### ***Predictions***

Privatizing herds and strengthening traditional use-rights of families should have two economic effects.<sup>54</sup> First, more security of families over their winter pasture enables more animals to survive the winter in the long run (but not necessarily in the short run).<sup>55</sup> The survival of more animals in the winter increases the pressure on common summer pastures.<sup>56</sup>

Second, privatization creates obstacles to the movement of herds endangered by inclement weather. As explained, the movement of endangered herds requires cooperation among families. The scope of cooperation may involve many families if inclement weather affects a whole region of the country. The involvement of many families requires collective choice about which herds to relocate, and when and where to relocate them. Collective choice involves an active role for officials, not just bilateral negotiations among families.<sup>57</sup> Privatization undermines the political mechanisms for collective choice and reduces official discretion.<sup>58</sup> In other words, privatization increases the transaction costs of insurance against climatic risk, and less insurance against climatic risk results in more winter deaths of animals.

I have predicted that privatizing winter pastures reduces winter-kill caused by congestion and increases winter-kill caused by climatic risk. The former effect should prove stronger than the latter effect in the long run (although not necessarily in the short run<sup>59</sup>), and the aggregate number of animals should rise, especially when two additional

factors are considered. Prices for animal products will rise as the government lifts controls and restrictions,<sup>60</sup> which will prompt families to obtain more fodder to feed animals in the winter.<sup>61</sup> Furthermore, the number of nomadic pastoralists is increasing due to population growth and the return of urban families to the countryside.<sup>62</sup>

If the pressure to over-graze summer pastures increase in the future as I predict, Mongolians will need mechanisms other than winter-kill to avoid over-use of summer pastures. The obvious legal device is to create exclusive use-rights to summer pastures. The creation of exclusive use-rights to summer pastures involves a trade-off between congestion and insurance. As noted, privatization lowers congestion and increases the cost of insurance. To achieve an optimum, privatization should proceed until the saving in congestion costs equal the increase in the transaction cost of insuring against climatic risk. Consequently, I predict the gradual evolution of exclusive use-rights in places where summer pastures become over-crowded,<sup>63</sup> combined with attempts to find new ways to protect against inclement weather.<sup>64</sup>

## ***Conclusion***

Privatizing pasture land in Mongolia aggravates climatic risk by increasing the transaction costs of moving herds from one micro-climate to another. These facts point to a fundamental tradeoff when privatizing a public-access resource. Open-access resources are susceptible to inefficient congestion because users receive the average product, not the marginal product. This fact distorts incentives and leads to inefficient congestion. However, averaging also spreads risk. Conversely, privatization concentrates risk. This phenomenon should occur generally, although seeing it is easiest in a harsh environment like Mongolia's.

Mongolian customary law has evolved efficient solutions to the problems of a pastoral economy in a harsh environment. Mongolian customary law has evolved for more than a millennium in response to the conditions of a pastoral economy. Customs provides the key to vexing questions that Mongolia now faces concerning rural economic development.<sup>65</sup> Development should proceed by strengthening customary law, not

undermining it.<sup>66</sup> The reasons why the state should not allot land to families in violation of customary law are the same as the reasons against forced collectivization: Force disrupts a delicate balance between congestion and climatic risk.<sup>67</sup> Legal reforms need to be integrated with customary law in this country, so advice on reform should be based on extensive knowledge of the country and intensive interaction with reformers in the country.

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### Endnotes

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<sup>3</sup>The population of Mongolia at the end of 1992 was 2,215,000, of whom 330,100 are herders and their families. Almost all herders are nomadic, although some have established permanent living sites near towns or paved roads. 1992 Statistical Yearbook

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as reported in the Consultancy Centre (1994), pages 1 and 2. For details on Mongolia's 25 million livestock, see Economist Intelligence Unit, table on page 44.

<sup>4</sup>"Four broad ecological-territorial zones can be distinguished in Mongolia on the basis of prevailing ecological conditions, geographical boundaries and herding methods. These are: the Altai mountain zone, the Hangai-Hentii mountain zone, the steppe zone and the Bogi-steppe zone." Bazargur, D., C. Shilrevadja, & B.Chinbat, page 2. The zones are explained at length in Figure 1 on page 10 and related discussion.

<sup>5</sup>Here is a typical opinion: "...although there is probably no overgrazing problem, there are local problems, especially where customary tenure arrangements have been undermined." Institute of Development Studies at University of Sussex, U.K. and associated Mongolian institutions (1993), page ii.

A less typical view alleges significant degradation of the land during collectivization, which continues under new circumstances: "The thirty years under collectivisation (1959-1989) constituted a period in which questions of territorial organisation and land management were ignored or avoided. As a result, a substantial proportion of natural pasture has become degraded and traditional techniques have been forgotten... We consider that collectivisation marked the starting point for costly errors in relation to land tenure and pastoral techniques...In recent years, some herders have begun to move unsystematically and gain uncontrolled access to grazing of neighboring brigades and districts. In order to guard against this, other herders have adopted the defensive and historically unprecedented strategy of spending all four seasons at their winter and spring

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places. If they perceive that their important winter and spring pastures are likely to be grazed out by others during other seasons, the customary users of these areas may choose to remain in those pasture areas themselves to prevent such encroachment. The overall consequence however is that substantial areas of pastures have become damaged through overuse." Bazargur, D., C. Shilrevadja, & B.Chinbat, page 1 and page 6.

<sup>6</sup>The Institute of Development Studies at University of Sussex, U.K. and associated Mongolian institutions, have recently conducted field research on livestock and land in Mongolia under the title Policy Alternatives for Livestock Development in Mongolia (PALD). A series of useful reports have been published. I visited Mongolia in June of 1994 to participate in a colloquium on business law sponsored by IRIS (Institutional Reform and the Informal Sector) and USAID. I taught the economic analysis of contracts to Mongolian judges and drafters of their civil code and land law. These teaching session gave me the opportunity to discuss the ideas presented in this note. I also spent two days in the countryside with a translator and a member of Parliament who is especially interested in land.

"Mongolian herding communities are generally organised around the management of viable grazing territories, and have effective customary rules and procedures to manage the resources of these territories. The period of collectivisation to some extent weakened these customary tenure systems, but they are re-emerging rapidly under economic reform. They have important weaknesses however, and cannot cope on their own with the rapid and far-reaching changes triggered by privatisation and the move to a market economy...Given ecological and other constraints, private freehold tenure of grazing land

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by individual households is not a viable general solution. Different mixes of public and private freehold and leasehold, at individual and group level, offer the best solutions, and provide the flexibility needed to adapt the tenure system to varying local conditions..." from summary in Institute of Development Studies at University of Sussex, U.K. and associated Mongolian institutions (1993).

"... improving the living standards of herders and at the same time enabling them to remain as "valley keepers", or careful custodians of their local environment, will not be achieved by focusing exclusively on households as atomistic units with private herds. In fact herding households were never so individualistic as this even prior to the 1921 Revolution. They formed collective units of ownership within which they were able to decide some of their own socio-economic problems...Research has usually shown that policy measures not in accordance with our livestock farming traditions are inappropriate." Bazargur, Shilrevadja, & Chinbat, page 1.

<sup>7</sup>In an elegant article, Ellickson (1993) traces the historical evolution of property rights, drawing upon the theme that private property rights are created when the "dead weight loss" from group rights exceeds the "transaction costs" of private property. Also see Field (1989), Ostrom (1990), Eggertsson (1990 and 1992), and Ellickson (1991). An economic account of property rights in the West from Roman times is found in Bouckaert.

<sup>8</sup> This point was made by McCloskey concerning open fields in England and by Cooter concerning tribal land in Papua New Guinea.

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<sup>9</sup>The classical tradeoff between the costs of congestion and exclusion has some application to Mongolia. One paper discusses the fact that some families now find that they must stay all year at winter pastures to guard against others grazing them. See Bazargur, D., Shilrevadja, C., & Chinbat, B. (1993), page 6. This is a cost of exclusion. In addition, the costliness of fencing materials prior to the mass production of barb wire raised the cost of boundary maintenance in many areas of Mongolia. Surveying and registering privatized land is discussed in Whytock (1992), p62. Finally, the classical analysis may apply to congested pasture around wells and transportation links.

<sup>10</sup> Mearns (1993b) stresses the central role played by unpredictable, inclement weather in the formation of property rights. He tests and largely confirms the following hypothesis:

The hypothesis outlined earlier, based on the economic dependability of resources model, was that territorial behaviour among pastoralists in the more equilibrial grazing ecosystems of Mongolia, characterised by relatively high forage density and predictability, would correspond to a geographically stable territorial system..., while in less equilibrial ecosystems, characterised by relatively low resource density and predictability, would be territorially unstable and feature increased mobility and dispersion...”page 97.

<sup>11</sup> A similar argument is developed in Mearns (1993b).

<sup>12</sup> This quick movement of animals in late summer is called the “otor.”

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<sup>13</sup>The most distinguished scholar of Mongolian land arrangements describes the facts as follows: “Customary law in Mongolia does recognize individual rights in winter pasture sites, although not in all parts of the country, and not as permanent, inalienable rights.” Mearns (1993a), page 59.

<sup>14</sup>Families typically begin moving towards their winter pasture in October and arrive in November, remaining until all animals have given birth in March or April. The general pattern of cyclical movement through the seasons has been mapped for various localities. For example, see Institute of Development Studies at University of Sussex, U.K. and associated Mongolian institutions (1991) , pages 27-33.

<sup>15</sup> A Mongolian saying: “If I put my hut down, the place is mine today and tomorrow it is someone else’s.”

<sup>16</sup> This point is explained at the level of general theory by Nugent and Sanchez (1993) at page 89, who write “the extremely high local variability of rainfall in ASARs implies that the risk to the individual herdsman can be reduced substantially by gaining access to the largest possible grazing area.”

<sup>17</sup>Soil erosion seems slight, except where motor vehicles churn the roadless steppe into dust. The more subtle form of degradation concerns a deterioration in the type of plants. One study suggests that collectivization resulted in significant degradation of this kind through subsidies for winter fodder. See Mearns (1993a), pages 21-25. Also see Bazargur, Shiirevadja, and Chinbat, page 1. Other studies find little evidence of such

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degradation. See Institute of Development Studies at University of Sussex, U.K. and associated Mongolian institutions (1993), page ii.

<sup>18</sup>Eggertsson (1991) found that families are allowed to put animals on the open summer pastures in the mountains in proportion to the size of their lowland fields, where fodder is cut to feed the animals in the winter. The total number of animals allowed on the summer pastures are determined by their carrying capacity. In Mongolia, no one limits the total number of animals on the common summer pastures. Rather, nature provides the limit by severely constraining winter food for the animals.

<sup>19</sup>Ssu-Ma Chien, pages 163-164.

<sup>20</sup> The general reference is Bawden. Also see Petrov. He discusses attack of a White Russian Army on the Chinese in Mongolia on pages 215-216. Subsequently the Red Army and its Mongolian sympathizer destroyed the White Army and its Mongolian sympathizers in Mongolia. Note also that a combined force of Mongolians and the Russian Red Army defeated the Japanese in 1939 (Bawden, page 329), and subsequently the Russians prevented annexation by the People's Republic of China. "Inner Mongolia," which is a province of China, has suffered a fate similar to Tibet. The Chinese government in Taiwan still asserts that Mongolia is a province of China.

<sup>21</sup> Bawden, chapter 6, pages 238-289.

<sup>22</sup>The estimated fall in national income exceeded 40% in 4 years. The year-by-year estimates are as follows: 1990 -2.5%, 1991 -16.2%, 1992 -7.6%, 1993 -15.0%. See Economist Intelligence Unit. Also see Hahm (1993).



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<sup>23</sup> Soviet financial assistance, which ended in 1991, had averaged 30% of GDP. See Hahm, page 1. "In the first months of the 1990's, Mongolia was still under the hegemony of the Soviet Union, receiving aid equal to 25% of GDP and conducting 95% of its trade within the CMEA." Korsun and Murrell (1994a), page 3.

<sup>24</sup> To illustrate, Mongolia has no minister of tourism and reports no statistics on income from tourism. See Economist Intelligence Unit.

<sup>25</sup> These facts were true as of May 1994. See Consultancy Centre, IAMD, page 1.

<sup>26</sup> Although Mongolia has courts at the sum level, the relative role of courts and administrators in resolving local disputes is unclear. See Supreme Court of Mongolia.

<sup>27</sup> Peter Murrell thinks that these local officials are caught between their dependence upon the center and the growing independence of the herders. (Private communication from Murrell to Cooter.)

<sup>28</sup> Whytock (1992), page 10.

<sup>29</sup> "Land...became the property of the Emperor after the Manchu dynasty was established. Land use was then allocated "administratively," for pasture, agriculture, mineral deposits, military frontier guards, horse relay stations, and lamaist monasteries. When the Manchu dynasty was deposed in Mongolia, the Bogdo-Khan became the supreme owner of the land. Intermediate officials -- khoshun governors, "feudal lords" -- exercised their right of land use within designated boundaries under both periods." Shirendyb 1976), page 524, cited Whytock (1992), page 12.

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<sup>30</sup> Everyone in the rural population became members of state farms (“negdel”) in the 1950s.

See Institute of Development Studies at University of Sussex, U.K. and associated Mongolian institutions (1991), page 4. The steps in creating and dismantling Mongolia’s collectives are described in Mearns (1993a), pages 10-12.

<sup>31</sup> The number of privately owned animals increased substantially after 1989. By 1990, about 1/2 of pastoral family income came from privately owned animals. Institute of Development Studies at University of Sussex, U.K. and associated Mongolian institutions (1991), circa page 9.

<sup>32</sup> For example, sheep and horses eat different grasses, goats lead sheep to forage, and some animals keep others warm during the winter.

<sup>33</sup> According to Hahm (1993), page 1, Mongolia began dismantling its centrally planned economy in the first quarter of 1990 and restrictions on private ownership of herds were eliminated in 1991. However, Peter Murrell, who was in Mongolia at the time, states that he did not observe these events beginning until January of 1991. (Private communication from Murrell to Cooter.) In any case, rural families were eager to acquire ownership of herds, although the method of distributing the animals caused disagreements. Animals were typically distributed on a per capita basis to members of rural organizations or residents of rural districts. Problems arose when people left towns to return to the countryside in order to claim a share in the distribution of the herds. See, for example, Institute of Development Studies at University of Sussex, U.K. and associated Mongolian institutions (1991), page 17. A discussion of privatization by

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vouchers and outmigration from cities is in Institute of Development Studies at University of Sussex, U.K. and associated Mongolian institutions (1991), page 9.

<sup>34</sup> Mongolian families typically group together to cooperate and share tasks during part of the year. For a more complete account, see note 50.

<sup>35</sup> State orders for basic agricultural products were implemented by the Mongolian Agricultural Commodities Exchange and the Central Procurement Cooperatives Union. Dismantling quotas and freeing prices have caused an increase in rural incomes and raised the price of meat in urban areas. The authorities reintroduced "mandatory" state orders for meat in Government Order no. 53 in March of 1993. The Order specifies direct state procurement for four slaughterhouses instead of through market channels. See Hahm (1993), pages 23-25.

<sup>36</sup> Whytock, page 54. Even foreigners can own use-rights to Mongolian land under the current constitution. Whytock(1992), page 49.

<sup>37</sup> Article 6, clause 3. See Whytock(1992), page 6.

<sup>38</sup> Report on draft Land Law and amendments to Civil Code is discussed in Institute of Development Studies at University of Sussex, U.K. and associated Mongolian institutions (1993). However, these plans are evolving and changing rapidly in response to various political pressures.

<sup>39</sup> The governing party is discussing a proposal to give .5 hectares to each settled family around the ger site.

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<sup>40</sup>Land tenure allegedly conforms to the following pattern since the founding of an independent Mongolian empire in 1206: "Private households exercised customary use rights over specific areas, defined in relation to the ecological resource base, and they customarily owned areas of pasture used during the winter and spring. In addition they had customary rights to areas for common , rotational grazing during the summer. Some of these traditional, customary rights continue to exist. For example, it has not been forgotten that unwritten, customary laws demanded high penalties for unauthorized access to someone else's pasture." Bazargur, D., Shilrevadja, C., & Chinbat, B. (1993), page 5.

<sup>41</sup> Whytock(1992), pages 11-12.

<sup>42</sup> Whytock(1992), pages 13-14.

<sup>43</sup>"It is common knowledge which winter/spring pasture sites are customarily owned by whom, and priority is always given to the holder of these customary rights. Under collectivisation, this was formalized by the administrative allocation of shelters, although this did not necessarily respect customary tenure rights...." Mearns (1993a), page 21.

<sup>44</sup>Mongolia's civil code, derived from Russia, does not discuss customary ownership or its legal status. This fact remains true in the draft of a proposed new civil code that I saw in Mongolia.

<sup>45</sup> Korsun and Murrell (1994b), pages 14-17.

<sup>46</sup>I probed this fact repeatedly in seminars with district court judges.

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<sup>47</sup> Whytock(1992), 44-45.

<sup>48</sup> Whytock(1992), pages 32-37.

<sup>49</sup>Whytock (1992), page 50.

<sup>50</sup>The smallest unit of cooperation, called the "khot ail," consists of 3-5 families, with customary use of specific areas, customary ownership of winter and spring pastures, private ownership of herds, cooperative herding on a daily basis, and nomadic moves made in response to ecological conditions. See Table 1 page 4 and discussion of it. The khot ail are joined into larger units of cooperation around springs, and still larger units of cooperation in ecological areas. These traditional groups apparently strengthened as collectives dissolved. Bazargur, D., Shilrevadja, C., & Chinbat, B. (1993), pages 4-5. A fact about Mongolia that strikes a legal anthropologist is the absence of clans or tribes. The Manchus sought to destroy such affiliations by suppressing family names and recognizing only first names and patronymics. However, Mearns believes that the decline in solidarity around the kinship group dates from at least the 13th century. Mearns (1993a), page 8. For a discussion of the historical evolution of social units in Mongolia, see Mearns (1993a), page 5. Careful field work by Mearns found that the khot ail varies in size from 2 to 10 families. See Mearns (1993a), pages 44-45.

<sup>51</sup>Institute of Development Studies at University of Sussex, U.K. and associated Mongolian institutions (1991), page 43. Apparently fodder was often dropped from helicopters to remote areas in winter under the old system of centralized controls.

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<sup>52</sup>Consistent with this account of insurance is the fact that the economically viable units are larger in the drier, riskier Gobi area than in wetter north, and privatization of collectives proceeded more slowly in the south. See Mearns (1993a), page 3 and page 12.

<sup>53</sup>Under communism, rural people received health, education, and veterinarian services from the sum administration, often through collective enterprises. Interview data reports an attachment of rural people to collective organizations and the lamenting of their demise, although there is no lamenting of the privatization of herds. See Policy Alternatives for Livestock Development in Mongolia (Working Paper No. 2, August 1991) especially page 14. In general, social services have declined sharply in Mongolia. For example, educational expenditures declined absolutely and relative to the government budget since 1989. See Consultancy Centre, IAMD, especially pages 8-10.

<sup>54</sup>The re-emergence of local institutions increases the security of traditional use-rights. However, general legal uncertainty undermines settled expectations. I presume that the first effect, which strengthens customary rights, will prove stronger than the second. For a discussion, see Mearns(1993a), page 26.

<sup>55</sup>If exclusive rights to winter pasture broke down, open-access would result in an short run increase in the number of animals on winter pasture. However, short-run over-use of winter pastures would result in a long run decline in the number of animals surviving the winter.

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<sup>56</sup>Proposals are being discussed in Ulaanbaatar to give families ownership over the permanent structures erected on winter pasture and the land under them, and to formalize exclusive use-rights to winter pasture.

<sup>57</sup>Formal rules of land tenure restrict herders to pastures in their own sum, but “trades” and reciprocal agreements often occur. See Institute of Development Studies at University of Sussex (1991), page 33.

<sup>58</sup>Note, however, that much of Mongolia’s rapid privatization has simply transferred power to insiders already controlling the organization being privatized. The structural changes are less than the word “privatization” connotes. See Korsun and Murrell (1994b).

<sup>59</sup>If economic disruptions continue to cause a decline in production of fodder on farms, the number of livestock may decline. See discussion in footnote 61.

<sup>60</sup>The government eliminated price controls on meat and subsequently re-imposed them. The government does not currently attempt to control the price of such animal products as milk and wool, although it recently forbade the export of raw cashmere. See Institute of Development Studies at University of Sussex, U.K., and Institute of Agricultural Economics, National Agricultural University, Mongolia (1994). The government apparently follows a meandering course towards free markets in agricultural products.

<sup>61</sup>Note that Mearns (1993a), pages 21-25, found that an increase in subsidized winter fodder by collectives caused the degrading of 5% of pasture in Erdene sum. However, the prospects are bleak for applying mechanization to increase fodder production in the

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short run, because agriculture is currently declining relative to pastoralism. See Whytock, (1992), page 52. Furthermore, the break in trade with Russia has caused petroleum prices to rise sharply, which reduces the use of agricultural machines. See Institute of Development Studies at University of Sussex, U.K., and Institute of Agricultural Economics, National Agricultural University, Mongolia (1994), page 7. However, the end of Mongolia's isolation will bring access to superior technology, which may eventually decrease relative prices of fodder. Note that higher petroleum prices have reduced the use of jeeps in hunting wolves, and herders are now complaining about sharp increases in loss of livestock to wolves. See Institute of Development Studies at University of Sussex, U.K. and associated Mongolian institutions (1991), page 31.

<sup>62</sup>Population has moved from town to country at least since 1991, partly as a response to urban unemployment and partly as a response to the revival of barter trade caused by run-away inflation. Whytock, (1992), page 8. Also see Institute of Development Studies at University of Sussex, U.K., and Institute of Agricultural Economics, National Agricultural University, Mongolia (1994), page 6.

<sup>63</sup>Livestock "offtake" (animals sold and slaughtered for meat consumption) increased from 1988 until 1991, began declining in 1991 and has apparently continued to decline. This is presumably explained by the initial liberalization of meat prices, followed by the subsequent imposition of price controls, as Mongolia returned to its traditional policy of providing artificially cheap meat to the towns. Liberalization of livestock products other than meat (wool, cashmere, skins, hides) has also been partially repealed. Thus the year-to-year variations in livestock "off-take" depends upon transitory policies which, I



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believe, market forces will presumably undermine. See Institute of Development Studies at University of Sussex, U.K., and Institute of Agricultural Economics, National Agricultural University, Mongolia (1994), table on page 2, and page 7.

<sup>64</sup>One way for an individual family to lower climactic risk is to obtain more winter fodder for the animals. Another way is to negotiate an arrangement for mutual aid with people in another climactic zone.

<sup>65</sup> Institute of Development Studies at University of Sussex, U.K. and Associated Mongolian Institutions (1993). The summary recommends private individual freehold for winter-spring shelters with restrictions (transferable within families but not saleable), and to recommend for "public individual leasehold" of land around winter shelters, and "public group leasehold" for summer and winter pastures. "Public v. private" means "state v. private" title. "Individual v. group" means right held by "named individual v. family or other cooperative group." "Freehold v. leasehold" means lease or ownership. In other words, if we imagine a dimension of property rights from relatively private and exclusive to relatively public and open, then Mongolian pastoral property could be ordered on this dimension as follows: winter structures < winter pasture < summer pasture. The report recommends the legal development of these three kinds of property into private ownership, private lease, and public lease, respectively.

<sup>66</sup>Whytock (1992), page 22, warns against "any legal change that does not fully consider contextual factors...". Mearns (1993a, pages 61-62) proposes to reconcile the flexibility and certainty through a system of "rolling leases" for rural land.

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<sup>67</sup>Means holds that individual tenure of pasture land is “rarely appropriate.” See Mearns, (1993a), page 57.